

REMARKS

Claims 5-9 is in this application. Claims 1-4 have been cancelled. Support for new claim 5 is based on original claim 1 and the disclosure on page 5 of the specification. Support for new claim 6 is found in the last paragraph on page 5 of the specification. Support for new claims 7-9 is found on page 10 of the specification.

A new declaration and power of attorney is being filed with this response.

In view of the cancellation of claims 2 and 4, the objection of the claims under 37 CFR 1.75(c) is moot.

According to the Office Action, claims 1-4 are rejected as being obvious based on the combination of Sharma et al. (US 2002/0114855A1), Hirsh et al. (US patent 5,711,932) and Wolfner et al. (US patent 6,380,159 B1). This is respectfully traversed.

The method disclosed in Sharma differs substantially from the invention claimed in this application. Sharma describes a method for detection of the analeptic and psychostimulant properties of extract from a specific plant *Acorus calamus* using a specific mutant of *Drosophila melanogaster* Sh⁵eag¹. The method as described involves use of media that includes phenobarbital or alcohol such as ethanol. The flies are then anesthetized and the recovery time is measured.

According to Greenspan et al. its invention provides methods of rapidly and efficiently identifying compounds that modulate a mammalian vestibular system (col. 2, lines 23-26).

The method disclosed in Hirsh as pointed out by the Examiner utilizes a decapitated invertebrate. The selected neuroactive agent is applied to the severed nerve cord on the invertebrate. (Col. 1, lines 63-65). Hirsh does as the Examiner noted disclose injection into intact animals.

The disclosure of Wolfner relates to isolation of an accessory gland protein from *Drosophila*. Wolfner does not disclose fly manipulation.

The Examiner states that it would be obvious to combine Sharma and/or Hirsh to study the geotaxis activity of the *Drosophila melanogaster* after treatment with drugs and after drug withdrawal and that the substitution of the neuroactive drug for a compound that modulates a mammalian vestibular system would be obvious since both would affect the locomotor and geotaxis activity. Applicants respectfully disagree.

As stated above Sharma describes a method for detection of the analeptic and psychostimulant properties of extract from a specific plant *Acorus calamus* using a specific mutant of *Drosophila melanogaster* Sh⁵eag¹. The method as described involves use of media that includes phenobarbital or alcohol such as ethanol. The flies are then anesthetized and the recovery time is measured. There is no suggestion of using a media with a neuroactive drug and thereafter having the same flies maintained with a media that does not contain the drug. Further, the flies are not subject to anesthesia before testing.

The mammalian vestibular system is different from neural plasticity and the effects on the two are not interchangeable. The mammalian vestibular system is the primary organ of equilibrium and thus plays a major role in the subjective sensation of motion and spatial orientation. A description of the vestibular system by David Dickman, Ph.D. from www.vestibular.wustl.edu/vestibular is attached. As explained in the attached report by Daniel Casasanto from www.serendip.brynmawr.edu/bb/neuro/neuro98, neural plasticity is the ability of neural circuits to undergo changes in function or organization due to previous activity.

Therefore, given the differences between the two systems both neurologically and functionally, it is not at all obvious that a model that is used to test for an effect on the mammalian vestibular system can be used to test for an effect on a completely different system. In addition, the

method of this invention cannot be carried out by decapitating *Drosophila* because of the need to test the locomotor activity twice. Hirsh in fact only discloses testing by adding amines to the cut nerve cord of the decapitated flies. Based on Hirsh it would appear that even if the drug is injected into the *Drosophila*, the *Drosophila* is killed.

Furthermore, none of the cited references disclose or suggest a test for determining a effect that is maintained after the drug is withdrawn as is claimed in this application. The method claimed in this application is for screening a neuroactive drug compound for effect on neural plasticity which is not obvious over the combination of references cited by the Examiner.

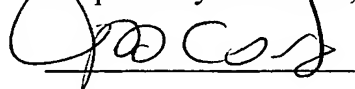
Therefore, it is respectfully requested that the rejection be withdrawn.

The nonstatutory obviousness-type double patenting rejection in regard to claim 1 of US patent 7,005,297 B2 is respectfully traversed. Claim 1 of the '297 patent claims a method for producing an inheritable change in locomotor behavior in *Drosophila melanogaster*. The method claimed in this application is a method for screening neuroactive compounds and the associated neural plasticity. Clearly, a method for determining the affect of a compound on neural plasticity is not obvious from a method for producing a genetic change in the *Drosophila melanogaster*. It is respectfully requested that this rejection be withdrawn.

Accordingly, it is respectfully requested that the rejection be withdrawn.

It is submitted that the present application is in condition for allowance and favorable consideration is respectfully requested.

Respectfully submitted,



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